CEC Environmental Performance Report Findings for Biological Resources

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Key Biological Resource Needs (Objectives)

- **Minimize system impacts to biological values**
  - Reduce effects on aquatic resources
  - Avoid undisturbed lands, and minimize off-site impacts
  - Minimize impacts to sensitive species and habitat
  - Reduce avian collisions and electrocutions
- **Create partnerships with other agencies**
  - Identify critical information and studies
  - Integrate planning, permitting, inspection and enforcement

Topics in the Biological Resources Section of the 2003 EPR

- Habitat Loss from Energy Production
- Nitrogen Deposition Trends
- Renewable Energy Impacts
- Transmission Line and Natural Gas Pipeline Impacts
- Out-of-State Power Impacts

<u>Topics already covered today:</u>

- Once-through Cooling Trends
- Hydropower Impacts

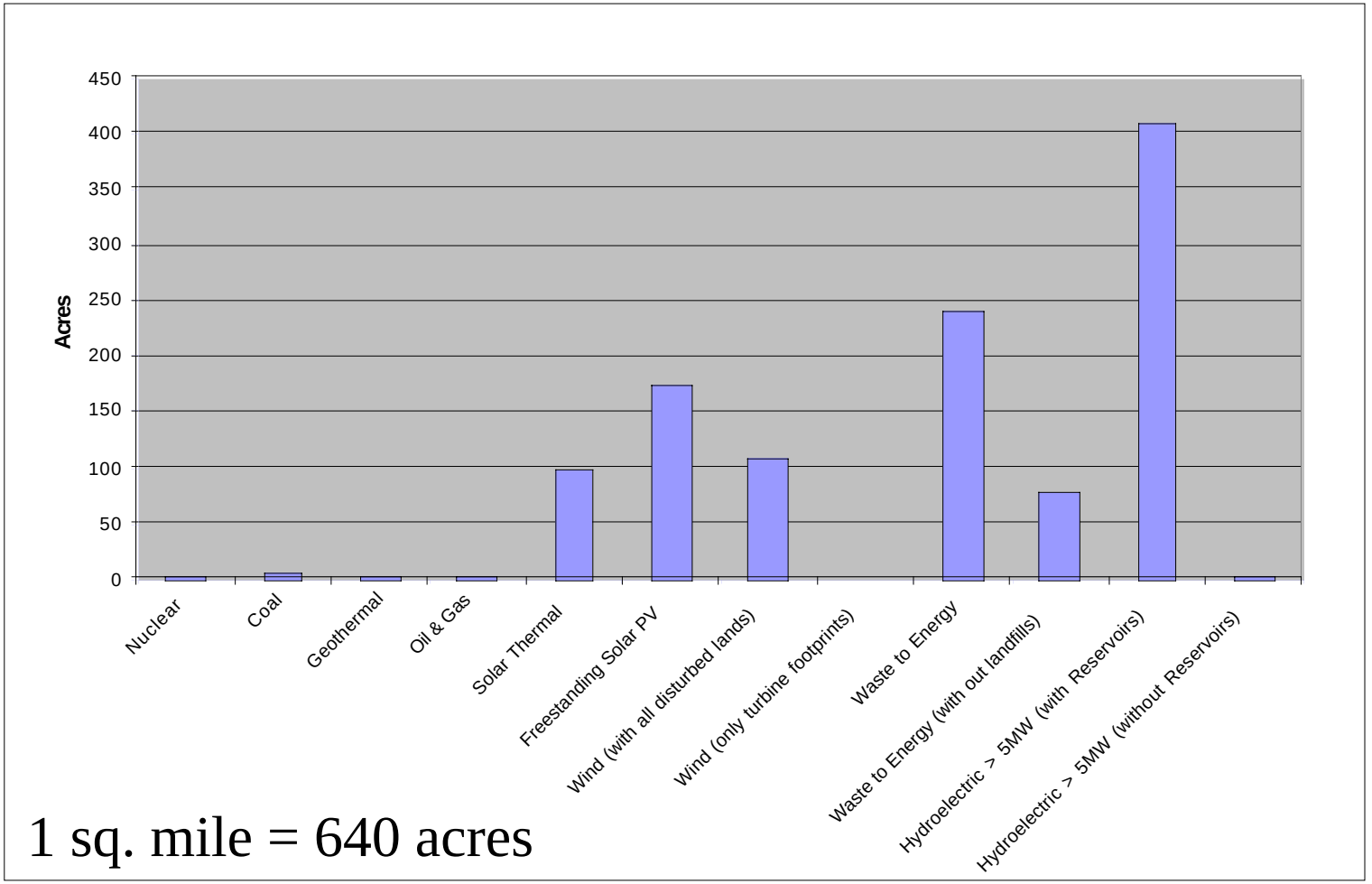
Major Issues and Findings from 2003 Report

- Case-specific information is needed to evaluate the impacts of nitrogen deposition
- Installation of transmission lines and natural gas pipelines should be restricted near areas of high biological value
- Renewable energy facilities and their associated linears have impacts which should be researched and evaluated
- Mitigation of aquatic impacts from once-through cooling continues to be a controversial environmental issue which requires case-specific information
- Agencies are seeking to restore salmon and steelhead fisheries during relicensing of hydropower facilities after years of impact

Findings from the 2003 Report
Habitat Loss from Energy Production

- Approximately 225 acres of habitat was lost from projects licensed at the Energy Commission.
- In 2002, about 10,500 acres was in direct energy production. About 3,900 of that was developed between 1996 and 2002.
- Energy production also uses land for fuel production and storage, or may fence off open space lands.

Acres Occupied to Create 20 MW (Hypothetical)



1 sq. mile = 640 acres

Findings from the 2003 Report
Nitrogen Deposition Trends

- Nitrogen deposition from new power plants and repower projects has potential cumulative impacts if the power plant is within the vicinity of nitrogen sensitive habitats, such as serpentine soil and desert communities.
- Potential nitrogen deposition impacts from new power plant proposals is emerging as an issue of concern.

Findings from the 2003 Report
Wind Turbine Impacts

- The largest single issue concerning wind turbines continues to be bird strikes with turbine blades.
- At existing wind farms with high bird collision incidence, no mitigation measures are known to reduce bird fatalities.


New wind turbines mixed with older ones near Palm Springs

- As more of the repower facilities come back on-line, the total amount of rotor swept area, a factor considered highly contributory to bird fatality risk, is estimated to increase with the correspondingly larger turbine blades

Findings from 2003 Report
Transmission Line and Natural Gas Pipeline Impacts

- Most transmission line and natural gas right-of-ways are located in urban and agricultural areas, but many cross the Mojave Desert and a few major corridors traverse forested regions of northern and eastern California.
- Some of California's rarest natural communities are within 1.2 miles (2 kilometers) of a transmission line or natural gas pipeline.
- Electrocution and collision studies are limited and no comprehensive state-wide survey has been conducted

Findings from 2003 Report
Transmission Line and Natural Gas Pipeline Impacts (continued)

- Any new transmission line projects have the possibility of degrading habitat for state or federally listed species or critical habitat.
- Electric transmission lines can cause wildfires; between 1996 and 2002, the number of wildfires on state lands from powerlines decreased from 284 to 181 (annual total).

Findings from 2003 Report
Additional Items

- Use of previously disturbed lands for energy projects can minimize effects on sensitive biological resources.
  - Building integrated solar photovoltaic and biogas-fired electric generators at landfills and sewage-treatment plants have the least risk of loss to biological resources.
  - Other renewable energy types, such as in-forest fuels, could have wildlife-friendly benefits if biological resource protections were integrated into the planning.
- Out-of-state power plants have impacts to local areas, but can also impact in-state air and water quality (such as the Mexican power plants' potential impacts to Imperial County).

Proposed Topics to be Developed for the 2005 Report

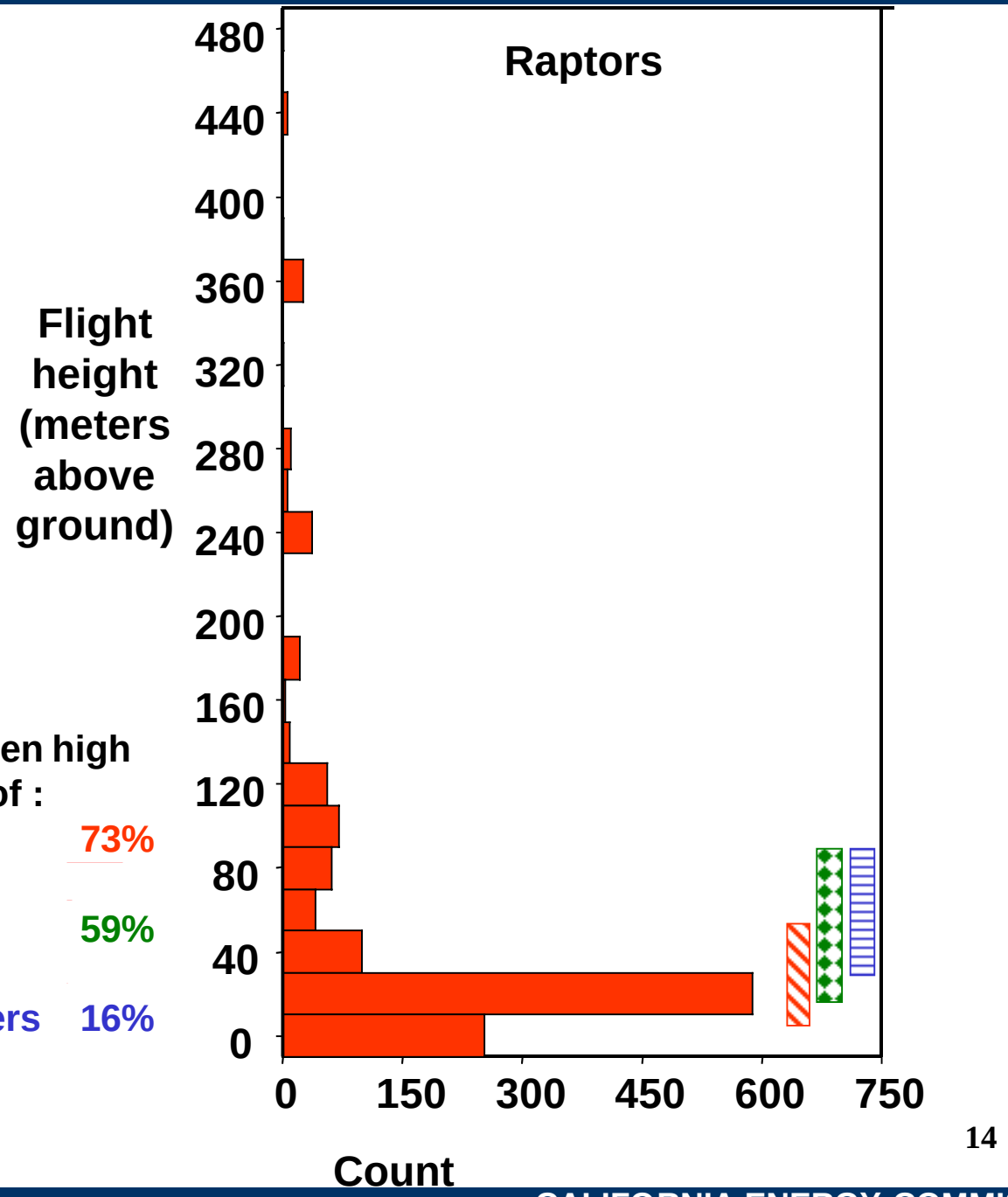
- Begin analysis of the footprint from out-of-state power plants
- Continue review of avian electrocution research and mitigation
- Continue review of trends in energy facility development

Proposed Topics to be Developed for the 2005 Report (continued)

Building on research funded under Public Interest Energy Research Program (PIER), staff proposes to:

- Review the results of site-specific nitrogen deposition studies in the San Jose area (and the state where possible). Recommend new deposition models used to calculate impacts from power plants or other stationary sources
- Review prospective renewable development locations and their associated transmission lines for their potential biological impacts (These are currently being mapped by PIER)
- Review of new information on avian collisions with wind turbines and possible mitigation (new PIER report was released in August 2004)

Count of Bird Flights at Altamont Pass Relative to Wind Tower Heights (PIER, August 2004)



Percent of flights between high and low blade reaches of :

Existing wind turbines	73%
Proposed new turbines	59%
Turbines on tallest towers	16%

QUESTIONS OR COMMENTS